



Michigan's Comprehensive Traffic Crash Records System (Before and After)

Crash Process Redesign



Quality vs. Quantity

“Statistics regarding street and highway accidents are so vital to any comprehensive understanding and treatment of the safety problem that their collection and analysis in every State and community are essential.”

**National Safety Conference – 1924
Washington, D.C.**

Crash Process Redesign

Quality vs. Quantity

Efficiency in 2008

| | <u>BEFORE</u> | <u>AFTER</u> |
|---------------------|---------------|--------------|
| Staffing | 24 | 14 |
| Crash Locating | 75% | 99.5% |
| Average Report Days | 103 days | 27 days |
| Year End Reporting | July | March |

Crash Process Redesign

Quality vs. Quantity

Striving for the “Six Pack” In Crash Data

- Integration
- Completeness
- Accuracy
- Uniformity
- Timeliness
- Accessibility



Crash Process Redesign

Quality vs. Quantity

To Obtain the Six Pack –

- Developed Quality Control Program
- Hired a Dedicated Crash Trainer
- Hired a Dedicated Programmer
- Pursuing a Reporting/Statistician Analyst
- Promoting Electronic Data Collection

Crash Process Redesign

Quality vs. Quantity

Developed Quality Control Program

- ✓ Each technician responsible for a quality initiative
- ✓ Data quality with technology
- ✓ Hundreds of reports, charts and maps from TCRS web
- ✓ QA/QC reports on an as needed basis - daily, weekly, monthly

Crash Process Redesign

Quality vs. Quantity

Hired A Dedicated Crash Trainer

- ✓ Two year grant for enlisted member
- ✓ Multiple training types created
- ✓ Over 50 trainings or presentations performed with more than 1000 people attending.
- ✓ Specialized Trainings and Reviews

Crash Process Redesign

Quality vs. Quantity

Hired A Dedicated Programmer

- ✓ Dedicated to the crash program
- ✓ Liaison to TCR and DIT
- ✓ Production support and enhancements
- ✓ Monitors electronic submissions and data captured

Crash Process Redesign

Quality vs. Quantity

Pursuing an Additional Analyst

- ✓ Reporting and statistical
- ✓ Link to other databases for more comprehensive picture in Michigan
- ✓ QA/QC for electronic submissions
- ✓ QA/QC for paper submissions

Crash Process Redesign

Quality vs. Quantity

Promoting Electronic Data (Current)

- ✓ Vendor/Agency Certification Guide
- ✓ UD-10e
- ✓ Vendor approved
- ✓ Agency Certified
- ✓ 7 vendors & 30 agencies current

Crash Process Redesign

Quality vs. Quantity

Promoting Electronic Data (Future)

- ✓ Additional grant funding for FY 2009
- ✓ 56 agencies by 10/1/08
- ✓ Vendor/Agency day – June 10, 2008

Crash Process Redesign

Quality vs. Quantity

BEST PRACTICES

Crash Process Redesign

Quality vs. Quantity

| Statistic Type | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|-----------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| Fatal Crashes | 63 | 62 | 69 | 63 | 85 | 89 | 95 | 106 | 100 | 83 | 88 | 84 | 987 |
| Fatalities | 69 | 70 | 81 | 67 | 92 | 96 | 104 | 117 | 111 | 88 | 98 | 91 | 1,084 |
| Injury Crashes | 5,173 | 4,860 | 4,433 | 4,554 | 5,110 | 5,310 | 4,936 | 5,273 | 5,015 | 5,174 | 4,701 | 5,013 | 59,552 |
| Injuries | 6,822 | 6,365 | 5,927 | 6,146 | 6,970 | 7,292 | 6,835 | 7,269 | 6,880 | 7,076 | 6,335 | 6,661 | 80,578 |
| Property Damage | 26,630 | 24,350 | 20,380 | 18,210 | 19,091 | 19,552 | 17,157 | 17,851 | 18,436 | 25,364 | 27,819 | 28,787 | 263,637 |
| Traffic Crashes | 31,866 | 29,272 | 24,882 | 22,827 | 24,286 | 24,951 | 22,188 | 23,240 | 23,551 | 30,621 | 32,608 | 33,884 | 324,176 |
| Non Traffic | 128 | 227 | 64 | 61 | 150 | 118 | 161 | 111 | 118 | 62 | 30 | 95 | 1,325 |
| Total Crashes | 31,994 | 29,499 | 24,946 | 22,888 | 24,436 | 25,069 | 22,349 | 23,351 | 23,669 | 30,683 | 32,638 | 33,979 | 325,501 |
| Electronic Source | 643 | 539 | 533 | 536 | 542 | 677 | 604 | 609 | 646 | 834 | 991 | 980 | 8,134 |
| Paper Source | 31,351 | 28,960 | 24,413 | 22,352 | 23,894 | 24,392 | 21,745 | 22,742 | 23,023 | 29,849 | 31,647 | 32,999 | 317,367 |
| Crashes Located | 31,780 | 29,194 | 24,822 | 22,769 | 24,216 | 24,869 | 22,115 | 23,172 | 23,480 | 30,537 | 32,495 | 33,797 | 323,246 |
| % Located | 99.7 | 99.7 | 99.8 | 99.7 | 99.7 | 99.7 | 99.7 | 99.7 | 99.7 | 99.7 | 99.7 | 99.7 | 99.7 |
| Not Located (2) | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 | 8 |
| Could not Locate (4) | 85 | 79 | 60 | 59 | 70 | 82 | 74 | 67 | 70 | 83 | 112 | 81 | 922 |
| Missing Data (9) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 3 | 5 |
| Trunkline Crashes | 11,882 | 11,716 | 9,451 | 9,244 | 9,668 | 9,831 | 8,689 | 9,405 | 8,928 | 12,058 | 12,952 | 12,696 | 126,520 |
| Drivers | 51,512 | 49,170 | 41,712 | 38,563 | 42,076 | 42,836 | 38,520 | 40,594 | 40,238 | 49,503 | 50,077 | 53,878 | 538,679 |
| MDOs Pending | 2 | 0 | 0 | 2 | 0 | 2 | 0 | 2 | 6 | 7 | 5 | 23 | 49 |
| MDOs Posted | 45,120 | 42,578 | 36,074 | 33,331 | 36,068 | 36,435 | 32,342 | 34,373 | 34,649 | 43,736 | 44,398 | 46,837 | 465,941 |
| MDOs Rejected | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| MDOs Drivers Bypassed | 6,181 | 6,342 | 5,442 | 5,026 | 5,750 | 6,128 | 5,924 | 5,935 | 5,338 | 5,521 | 5,436 | 6,822 | 69,845 |
| Large Truck Crashes | 1,291 | 1,385 | 1,244 | 1,050 | 1,246 | 1,153 | 893 | 1,094 | 1,047 | 1,320 | 1,144 | 1,236 | 14,103 |
| SafetyNet - Trucks | 832 | 526 | 419 | 428 | 504 | 380 | 359 | 393 | 258 | 343 | 536 | 153 | 5,131 |
| TCPs Purchases | 2,786 | 3,642 | 3,917 | 2,881 | 2,861 | 2,634 | 2,653 | 3,036 | 2,469 | 3,073 | 3,181 | 2,521 | 35,654 |

Quality vs. Quantity

2007 CRASH REPORTING STATS (Average Reporting Days by Agency)

3/6/2008

| <u>ORI</u> | <u>Agency Name</u> | <u>2007 Crashes</u> | <u>Avg Reporting Days</u> |
|------------|------------------------------|---------------------|---------------------------|
| 3213200 | Huron Co Sheriff's Office | 575 | 13 |
| 6160300 | Muskegon Police Dept | 739 | 13 |
| 5615600 | Midland Co Sheriff's Office | 748 | 13 |
| 7505200 | MSP White Pigeon | 338 | 13 |
| 6378400 | Troy Police Dept | 1854 | 13 |
| 0310300 | Allegan Co Sheriff's Office | 1190 | 13 |
| 6302700 | MSP Groveland Team | 477 | 13 |
| 5076500 | Sterling Heights Police Dept | 2185 | 13 |
| 3301100 | MSP Lansing | 411 | 13 |
| 1356000 | Marshall Police Dept | 134 | 13 |
| 1304300 | MSP Coldwater | 352 | 13 |
| 0923900 | Bay City Police Dept | 494 | 13 |
| 7578000 | Three Rivers Police Dept | 88 | 13 |

Quality vs. Quantity

STATUS OF CRASH LOCATING BY MONTH - 2007

| <u>Month</u> | <u>Total Crashes</u> | <u>Located</u> | <u>Unlocated</u> | <u>Located %</u> | <u>Could Not Locate (4's)</u> |
|--------------|----------------------|----------------|------------------|------------------|-------------------------------|
| January | 31862 | 31778 | 0 | 99.74 | 84 |
| February | 29268 | 29190 | 0 | 99.73 | 78 |
| March | 24881 | 24821 | 0 | 99.76 | 60 |
| April | 22824 | 22766 | 0 | 99.75 | 58 |
| May | 24285 | 24215 | 0 | 99.71 | 70 |
| June | 24948 | 24865 | 1 | 99.67 | 82 |
| July | 22187 | 22113 | 1 | 99.67 | 73 |
| August | 23233 | 23164 | 1 | 99.7 | 68 |
| September | 23546 | 23475 | 2 | 99.7 | 69 |
| October | 30604 | 30521 | 0 | 99.73 | 83 |
| November | 32585 | 32472 | 1 | 99.65 | 112 |
| December | 33792 | 33682 | 26 | 99.67 | 82 |
| | 324015 | 323062 | 32 | 99.71% | 919 |

Quality vs. Quantity

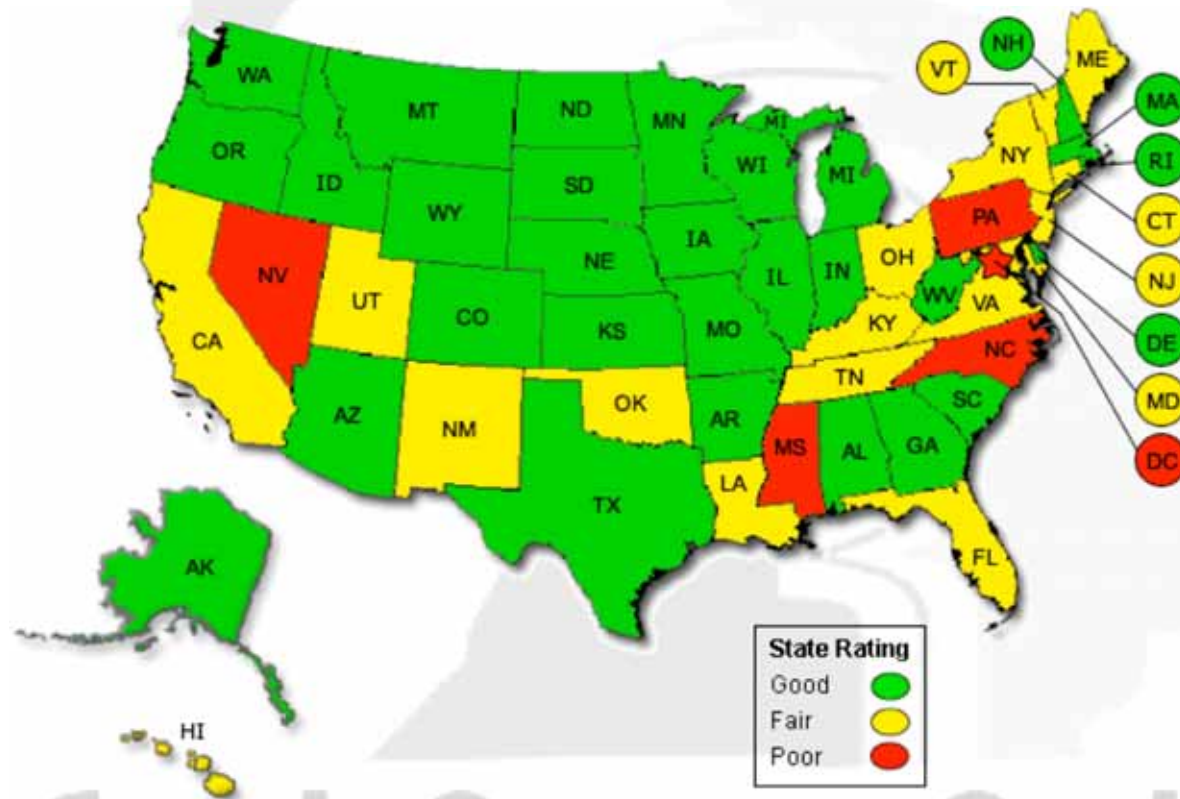
CRASH REPORTING STATUS (Expected Reporting Level - 58%)

3/8/2008

| ORI | Agency Name | Data Edit Error Total | 2007 UD-10 Total | 2008 UD-10 Total | % of 2008 | Errors / Crash |
|---------|-------------------------------|--------------------------|---------------------|---------------------|-----------|----------------|
| 0110100 | Alcona Co Sheriff's Office | 3 | 281 | 522 | 53.83 | 00.01 |
| 0209100 | MSP Munising | 274 | 204 | 284 | 71.83 | 01.34 |
| 0210200 | Alger Co Sheriff's Office | 56 | 23 | 35 | 65.71 | 02.43 |
| 0260200 | Munising Police Dept | 162 | 39 | 57 | 68.42 | 04.15 |
| 0305600 | MSP Wayland | 275 | 310 | 581 | 53.36 | 00.89 |
| 0310300 | Allegan Co Sheriff's Office | 781 | 1190 | 1878 | 63.37 | 00.66 |
| 0321000 | Allegan Police Dept | 150 | 55 | 103 | 53.40 | 02.73 |
| 0335300 | Saugatuck/Douglas Police Dept | 133 | 45 | 39 | 115.38 | 02.96 |
| 0347800 | Hopkins Police Dept | 10 | 2 | 4 | 50.00 | 05.00 |
| 0364100 | Otsego Police Dept | 119 | 31 | 74 | 41.89 | 03.84 |
| 0367000 | Plainwell DPS | 94 | 55 | 111 | 50.45 | 01.68 |
| 0381100 | Wayland Police Dept | 99 | 30 | 45 | 65.22 | 03.30 |
| 0407400 | MSP Alpena | 274 | 314 | 577 | 54.42 | 00.87 |
| 0410400 | Alpena Co Sheriff's Office | 3 | 139 | 254 | 54.72 | 00.02 |
| 0421500 | Alpena Police Dept | 182 | 116 | 245 | 47.35 | 01.57 |
| 0510500 | Antrim Co Sheriff's Office | 474 | 485 | 788 | 61.55 | 00.98 |
| 0524500 | Bellaire Police Dept | 10 | 5 | 18 | 27.78 | 02.00 |
| 0530400 | Central Lake Police Dept | 0 | 1 | 11 | 9.09 | 00.00 |
| 0537500 | Elk Rapids Police Dept | 52 | 29 | 34 | 85.29 | 01.79 |
| 0554800 | Mancelona Police Dept | 21 | 5 | 18 | 27.78 | 04.20 |
| 0610600 | Arenac Co Sheriff's Office | 798 | 328 | 646 | 50.77 | 02.43 |
| 0622500 | Augres-Sims Police Dept | 9 | 13 | 43 | 30.23 | 00.69 |

Quality vs. Quantity

FMCSA Quality Map



Crash Process Redesign

Quality vs. Quantity

F/LT Steve Rains, MSP - Lakeview Post #67

Township Report

High Crash Intersections – (Stationary Patrols)

- 3 @ W. Howard City – Edmore Rd. & N. Six Lakes Rd.
From 8/15/07 – 11/09/07, between 15:40 – 21:30

High Crash Road Segments – (Moving Patrols)

- 4 crashes on W. Howard City – Edmore Rd.
Between N. Hillman & N. Miles Rd.

Alcohol Related Crashes – (OWI Patrols)

- N. Sheridan Rd. between W. Fleck Rd & W. Yankee Rd.
(12/4/07 @ 13:45)

Quality vs. Quantity

Summary Page -

Montcalm County

Traffic Crash Summary Report
2007

- Total M.V. Crashes = 2,807
- Car vs. Deer Crashes = 1,558 or 55.5% of all crashes!

Quality vs. Quantity

Summary -

–15 were Fatal Crashes

- No fatalities occurred on the freeway (US-131).
- 3 were at intersections between the hours of 9:00 AM & 4:00 PM, mid-day crashes. NOTE: 50% of the high crash intersections identified included the noon hour within the time range.

–354 were Personal Injury Crashes

- 17 occurred on the freeway (US-131)
- 83 were at intersections. Nearly all hours of the day were represented. However, 29% occurred between 11:00 AM & 2:00 PM hours and 31% between 3:00PM & 6:00 PM. Almost 2/3rd's of the intersection related crashes occurred between 11:00 AM & 6:00 PM!

–880 were Property Damage Crashes

- 50 occurred on the freeway (US-131). Nearly all hours of the day were represented. 78% of these crashes occurred during the 12 hour period 9:00 AM – 9:00 PM.

Quality vs. Quantity

Summary –

– Alcohol Involved Crashes

3 were Fatal Crashes.

- » None occurred on the freeway (US-131).
- » One occurred between 6-7:00 AM, one between 3-4:00 PM,...

32 were Personal Injury Crashes.

- » None occurred on the freeway (US-131).
- » 5 occurred at intersections with 80% of them between the hours of 9:00 PM – 3:00 AM...

30 were Property Damage Crashes.

- » 4 occurred at intersections. None occurred during the 14 hours from 4:00 AM – 6:00 PM...

Quality vs. Quantity

In Closing –

The above summary, in combination with the detailed township reports on High Crash Intersections, High Crash Road Segments, and Alcohol Involved crashes; will be used in developing Traffic Initiatives in the following three areas:

Intersection Enforcement – During identified times of the day and targeted locations, this initiative will focus on violations of the Michigan Vehicle Code readily observed at intersections...

Mobile Patrols – Again, during identified times of the day and along segments of roadways within Montcalm County having high incidents of crashes, this initiative will focus primarily on moving violations of the Michigan Vehicle Code....

OWI Enforcement – With a history of alcohol related crashes, including times and locations over the last year within Montcalm County, a program of targeted enforcement will be implemented.

Quality vs. Quantity



B+

Michigan

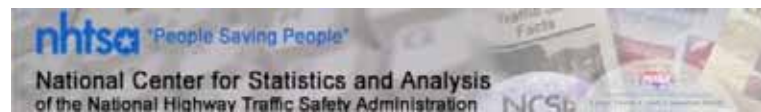
But the Department of Transportation, laudably, accomplished its 10-year goal of bringing 90 percent of the state's roads into good condition. Michigan's DOT has few peers in asset management — and in preventive maintenance — and has all the tools necessary to make smart decisions...

*Michigan and Georgia, for example,
produce a great deal of excellent performance
Information...*

Crash Process Redesign



Quality vs. Quantity



Quality vs. Quantity

- Accurate, completely and timely crash data essential for traffic safety partners that perform analysis.
- Accurate, complete and timely crash data provides a true picture of how Michigan is doing with traffic safety.
- Electronic crash data will improve data received while reducing manual processes and allow for additional QA/QC to be performed.

Crash Process Redesign